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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

James R. Geschwindt et al

Serial No.: 10/736,945

Filed: December 15, 2003

Title: Permeable Inlet Fuel Gas Distributor
for Fuel Cells

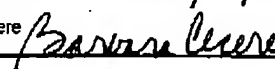
Docket No.: C-2950

Art Unit: 1795

Examiner: Laios, Maria J.

I hereby certify that this correspondence is being facsimile
transmitted to the United States Patent and Trademark Office
(Fax No. 571-273-8300) on January 15, 2010.

Barbara Cecere

RESPONSECommissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

1-3. This paper is responsive to the Office Action dated December 23, 2009. Claims 1-14 are pending; claims 3, 5-8 and 10 are withdrawn; and claims 1, 2, 4, 9 and 11-14 are present for consideration.

4. Claims 2, 4, 9 and 12 are rejected as anticipated by Kneidel. The problem is the meaning of the word "fuel"; as shown in the right center of Fig. 2 of Kneidel, the gas entering the structure is *"unreformed mixture of natural gas and steam"*, at the arrow 14. In column 3, about lines 42-45, *"the gas 14 (an unreformed mixture of natural gas and steam) enters from the right...."*

In the present specification, at page 4, line 24 et seq., it is clear that "The fuel inlet manifold 12 provides fuel to all of the fuel cells 13." The fuel that is provided to the fuel cells is provided from a fuel supply pipe 11 to a compact inlet fuel distributor 10, and thence to a fuel inlet manifold 12, and thence "to all of the fuel cells 13".

Lines 5-9 of claim 2 requires "a fuel gas inlet manifold (12, 53, 63) in fluid communication with all of said fuel flow field inlets; and an inlet fuel gas distributor having a fuel inlet chamber (10, 53, 62) interconnected with said fuel supply pipe and including a permeable baffle (39, 54,

60) through which fuel from said chamber is flowed into said fuel inlet manifold." Thus, the fuel gas that is supplied to the fuel flow field inlets of the fuel cells is fuel that comes from said fuel supply pipe into a fuel inlet chamber and thence into the fuel inlet manifold.

In Kneidel, if 14 is the fuel, then 17 cannot be the fuel. If 17 is the fuel (which it is) then it is not the same fuel that is supplied from the pipe (at 14); not until it passes through the catalyst 13 and thence through the screens 15. In fact, the fuel cell fuel is 17 and the reformer fuel is 14. These are two different fuels, and there is no way to have the unreformed mixture of natural gas and steam at 14 magically become the fuel cell fuel at 17, passing through the plenum 21 to the fuel cells of the stack 103.

With respect to claim 4, the only permeable baffles in Kneidel are the screens 15 which contain the catalyst 13 (column 3, about lines 46-48). The screens 15 cannot "be considered a solid and having small orifices" since claim 6 states that the permeable baffle "comprises screening." Thus, claim 4 cannot be anticipated by Kneidel.

With respect to claim 9, the fuel gas inlet manifold of line 2, is the one which in claim 2 at lines 5 and 6 is "in fluid communication with all of said fuel flow field inlets". In Kneidel, that would be the plenum 21. One might think that the "surface" of line 2 in claim 9 would therefore be the deflector 20 of Kneidel; however, "fuel flowing through said permeable baffle impinges on said surface" defines passage through the screens 15 at the ends 18 of the manifold in enclosure 10. But the surface at the ends 18 is not within the plenum 21. In any event, claim 9 depends from claim 2 and is patentable for the same reasons.

With respect to claim 12, "fuel" is that which is provided "to all the fuel cells", as described hereinbefore. In Kneidel, fuel appears only following reformation as it passes through the screens 15 at the ends 18. There is not two internal manifolds, including one that provides fuel to said fuel inlets which receives the fuel through the permeable baffle from the first internal manifold. In other words, the language of claim 12 cannot be fit into the disclosure of Kneidel.

For all of the foregoing reasons, reconsideration and allowance of claims 2, 4, 9 and 12 is respectfully requested.

5. Claims 1 and 13 are rejected as obvious over Kneidel in view of Reiser et al (Reiser) and LaPierre. Lines 1-9 of claim 1 are identical with lines 1-9 of claim 2 except for "and a fuel outlet" in line 3 of claim 1. The argument with respect to the rejection of claim 2 in section 4, hereinbefore, is applicable and incorporated here by reference; therefore, Kneidel cannot form the basis for an obviousness rejection of claim 1. Additionally, Reiser's valve 172 is at the exhaust of the fuel cells, not at their inlets; it is irrelevant to claim 1.

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Lines 1-8 of claim 13 are the same as lines 1-9 of claim 2 except that claim 13 does not have the permeable baffle. The argument about Kneidel not anticipating claim 2 (section 4, hereinbefore) is applicable and incorporated here by reference; therefore, Kneidel cannot form the basis of an obvious rejection of claim 13. Reiser's exhaust valve 172 is irrelevant to the inlet valve of claim 13.

Reconsideration and allowance of claims 1 and 13 is respectfully requested.

6. Claim 14 is rejected as obvious over Kneidel in view of Reiser. Kneidel cannot teach lines 1-9 of claim 14 as described hereinbefore with respect to lines 1-9 of claims 1 and 2 and lines 1-8 of claim 13. Therefore, Kneidel cannot form the basis of an obvious rejection of claim 14.

The argument about recycle obviously going downstream of the catalyst in Kneidel, is not applicable to claim 14 which has no catalyst.

Reconsideration and allowance of claim 14 is respectfully requested.

7. Claim 11 is rejected as obvious over Kneidel in view of Izumitani. Claim 11 is patentable as depending from claim 2. Reconsideration and allowance of claim 11 is respectfully requested.

Since withdrawn claims 3, 5-8 and 10 all depend from allowable claim 2, they conform to 37 C.F.R. 1.14(a) and are allowable in this application, which is respectfully requested.

To save the Examiner considerable time when this case is taken up, a short phone call is recommended should any issue herein still be unresolved. A few minutes on the phone could clarify a point, or result in a supplemental response which would further limit or dispose of issues. A five minute phone call can save the Examiner a lot of work. Such a phone call would be deeply appreciated.

Respectfully submitted,



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